PARTNER

POS Terminal

SP-820

User Manual

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About this manual

This manual is intended for system administrators who are familiar with setting up a new system and installing an operating system.

The manual consists of the following sections:

Chapter 1 Getting Started:	This section covers unpacking and checking the package contents, and identifying components. Information on connecting peripheral devices, and powering on is also provided.
Chapter 2 BIOS Setup Utility:	The BIOS chapter provides information on navigating and changing settings in the BIOS Setup Utility.
Chapter 3 Upgrading Components:	This section provides information on upgrading components.
Appendix:	The appendix covers troubleshooting, information on having the SP-820 serviced, and technical specifications.

Revision history

Version 1.0, June 2013

Safety information

Before installing and using the SP-820, take note of the following precautions:

- Read all instructions carefully.
- Do not place the unit on an unstable surface, cart, or stand.
- Do not block the slots and opening on the unit, which are provided for ventilation.
- Do not push objects in the ventilation slots as they may touch high voltage components and result in shock and damage to the components.
- Only use the power source indicated on the marking label. If you are not sure, contact your dealer or the Power Company.
- The unit uses a three-wire ground cable, which is equipped with a third pin to ground the unit and prevent electric shock. Do not defeat the purpose of this pin. If your outlet does not support this kind of plug, contact your electrician to replace your obsolete outlet.
- Do not place anything on the power cord. Place the power cord where it will not be in the way of foot traffic.
- Follow all warnings and cautions in this manual and on the unit case.
- When replacing parts, ensure that your service technician uses parts specified by the manufacturer.
- Avoid using the system near water, in direct sunlight, or near a heating device.

WARNING

The system uses a 3V CR2032 battery mounted on the mainboard to keep time. There is a risk of explosion if the wrong battery type is used when replacing. Dispose of used batteries according to local ordinance regulations.

CAUTION

The USB ports can be damaged if care is not taken when connecting devices. Ensure USB devices are correctly inserted.

Plugging a phone line into the LAN port (RJ-45 connector) can damage the connector. Take care only plug an RJ-45 connector into the LAN port.

FCC Statement

This device has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules, these limits are designed to provide reasonable protection against harmful interference when the device is operated in a commercial environment. This device generates, uses and can radiate frequency energy and, if not installed and used in accordance with this manual, may cause harmful interference to radio communications. Operation of this device in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his/her own expense.

FCC WARNING

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the device.

Best Management Practice (BMP) for Perchlorate Materials in California States

This device includes perchlorate in the lithium battery.

Perchlorate material-special handling may apply when handling this device.

For detail, refer to http://www.dtsc.ca.gov/hazardouswaste/perchlorate.

Vermont Mercury Management Rules

LCD display lamps contain mercury. Dispose of them properly.

CE Mark

This device complies with the requirements of the EEC directive 2004/108/EC with regard to "Electromagnetic compatibility" and 2006/95/EC with regard to "Low Voltage Directive".

Legislation and WEEE Symbol

2002/96/EC Waste Electrical and Electronic Equipment Directive on the treatment, collection, recycling and disposal of electric and electronic devices and their components.

The crossed-out wheeled bin symbol on the device means that it should not be disposed of with other waste at the end of its working life. Instead, the device should be delivered to a waste collection center for activation of the treatment, collection, recycling and disposal procedure.

To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate this device from other types of waste and recycle it responsibly to promote the sustainable reuse of material resources.

Business users should contact their supplier and check the terms and conditions of the purchase contract regarding its disposal.

It should not be mixed with other commercial waste for disposal.

TABLE OF CONTENTS

CHAPTER 1 GETTING STARTED 1

Unpacking the machine 1
Checking the package contents 2
Identifying components 3
Connecting peripheral devices 6
Connecting a cash drawer 7
Powering the machine on and off 8

CHAPTER 2 BIOS SETUP 9

About the Setup Utility 9
Entering the Setup Utility 10
BIOS navigation keys 10
Using BIOS 11
Main Screen 12
Advanced Settings 13
ACPI Settings 14
CPU Configuration 15
SATA Configuration 16
USB Configuration 17
Super IO Configuration 18
Serial Port x Configuration 19
Parallel Port Configuration 20
H/W Monitor 21
CPU PPM Configuration 22
Chipset Settings 23
System Agent (SA) Configuration 23
PCH IO Configuration 24
USB Configuration 25
Graphics Configuration 26
Memory Configuration 28
Boot Settings 29
Security Settings 30
Save & Exit 31

CHAPTER 3 UPGRADING COMPONENTS 33
Safety and precautions 33
Before you begin 34
Upgrading the hard drive 35

APPENDIX 37
Troubleshooting 37
Tips for Troubleshooting 37
The Power-On Self Test 37
Beep Errors at POST 37
Message Errors at POST 38
General Problems 39
Having the SP-820 Serviced 40
Specifications 41

CHAPTER 1
GETTING STARTED

This chapter describes the procedures from unpacking the SP-820, to powering it on. The following topics are described.

- Unpacking the machine on page 1
- Checking the package contents on page 2
- Identifying components on page 3
- Connecting peripheral devices on page 6
- Connecting a cash drawer on page 7
- Powering the machine on and off on page 8

Unpacking the machine

The machine and cable accessories are packed in a cardboard carton with foam padding for protection during shipping.

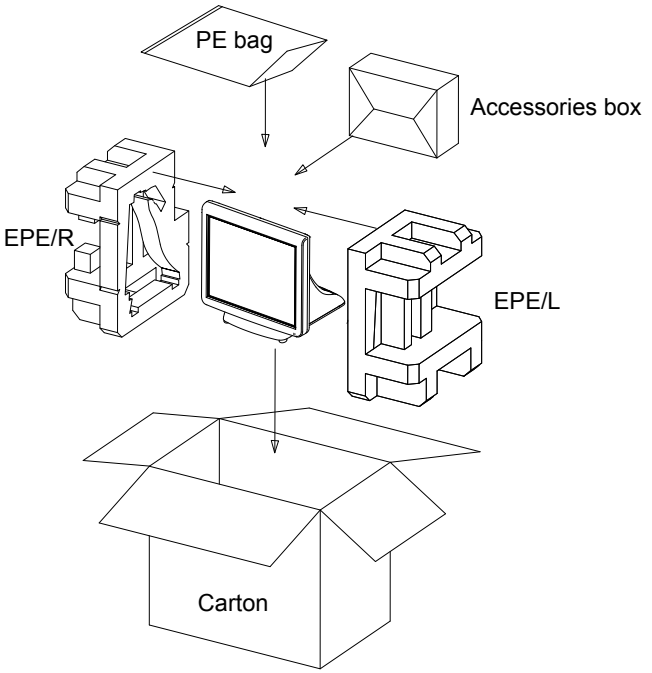
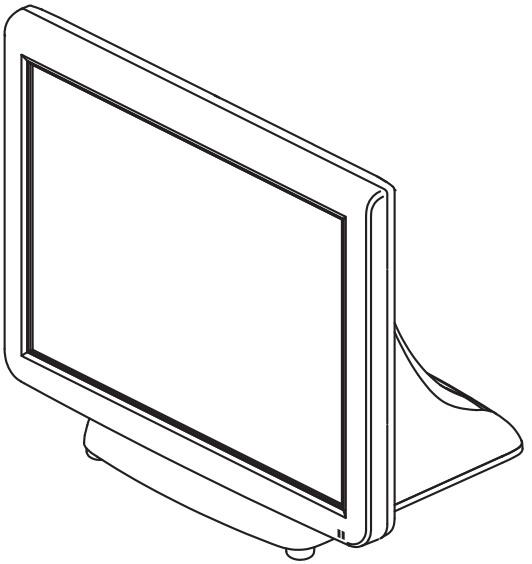


Figure 1.1 Unpacking the machine

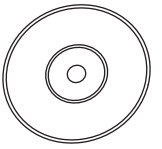
Carefully unpack the machine and keep the packing materials. If you need to ship it in the future, repack it as shown in Figure 1.1.

Checking the package contents

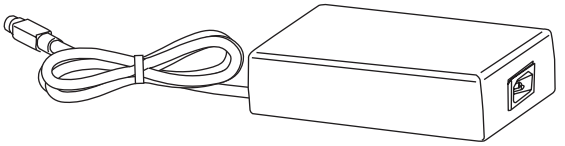
After you unpack the device check that the following items are included.



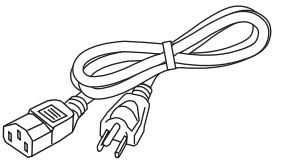
SP-820



Driver CD with drivers and the user manual PDF file.



Adapter



Power Cable

If any item is missing or appears damaged, contact your dealer immediately.

Identifying components

This section describes the parts and connectors on the machine.

Front-right view

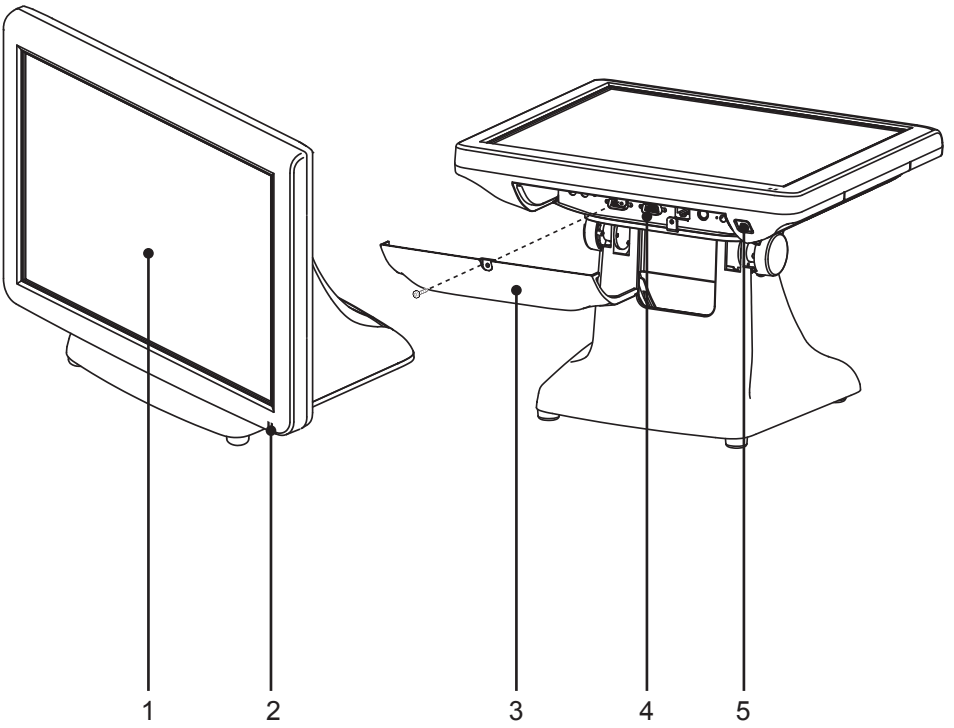


Figure 1.2 Front-right view

Component	Description
1	15-inch TFT LCD
2	LED Power Indicator
3	IO Panel Cover
4	IO Panel
5	Power Button

Rear view

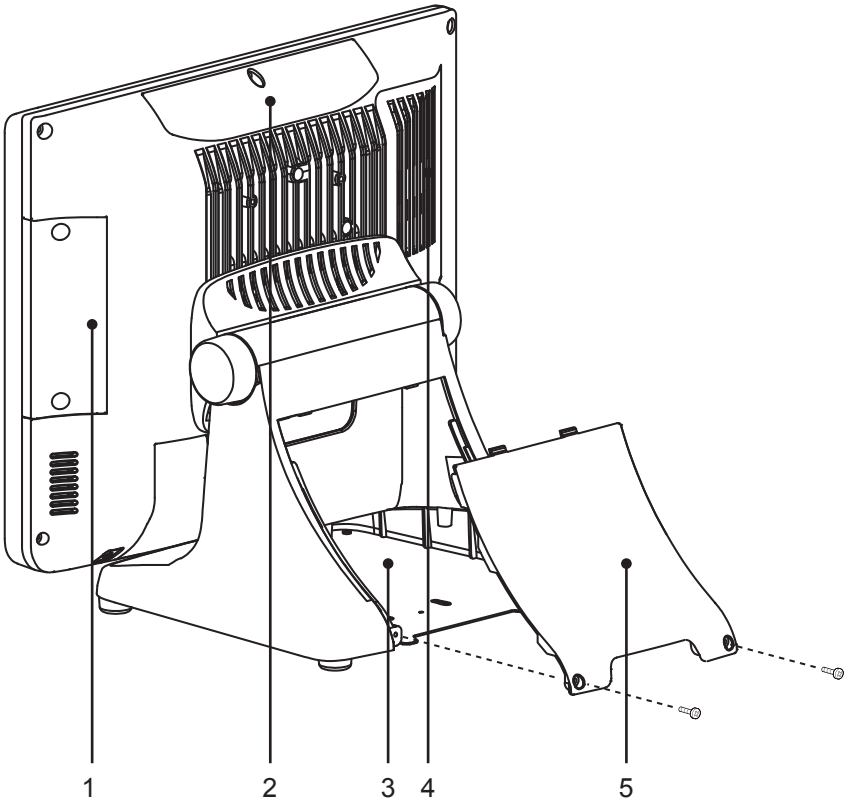


Figure 1.3 Rear view

Component	Description
1	MSR (optional) Slot
2	VFD Customer Display (optional) Slot
3	Cable Compartment
4	HDD Compartment
5	Cable Compartment Cover

I/O connectors

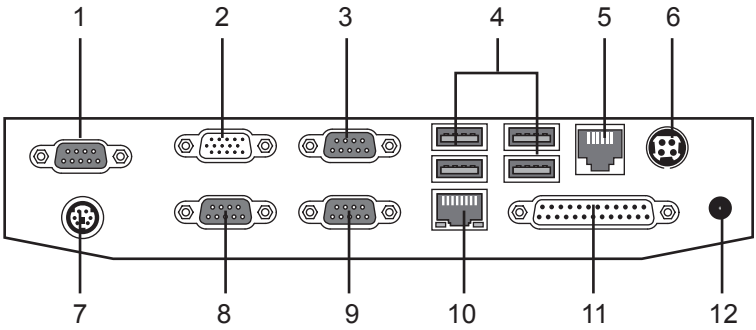


Figure 1.4 SP-820 I/O connectors

Connector	Description
1	COM 4 port
2	VGA port
3	COM 1 port
4	USB ports
5	RJ-11 cash drawer port
6	DC 12V input connector
7	PS/2 port
8	COM 3 port
9	COM 2 port
10	LAN jack
11	Parallel port
12	DC 12V output connector (for Partner LCD Monitor)

Connecting peripheral devices

Peripheral devices such as a printer or scanner can be connected to the machine. Refer to the user manual of the device you are connecting for instructions on installing drivers where needed.

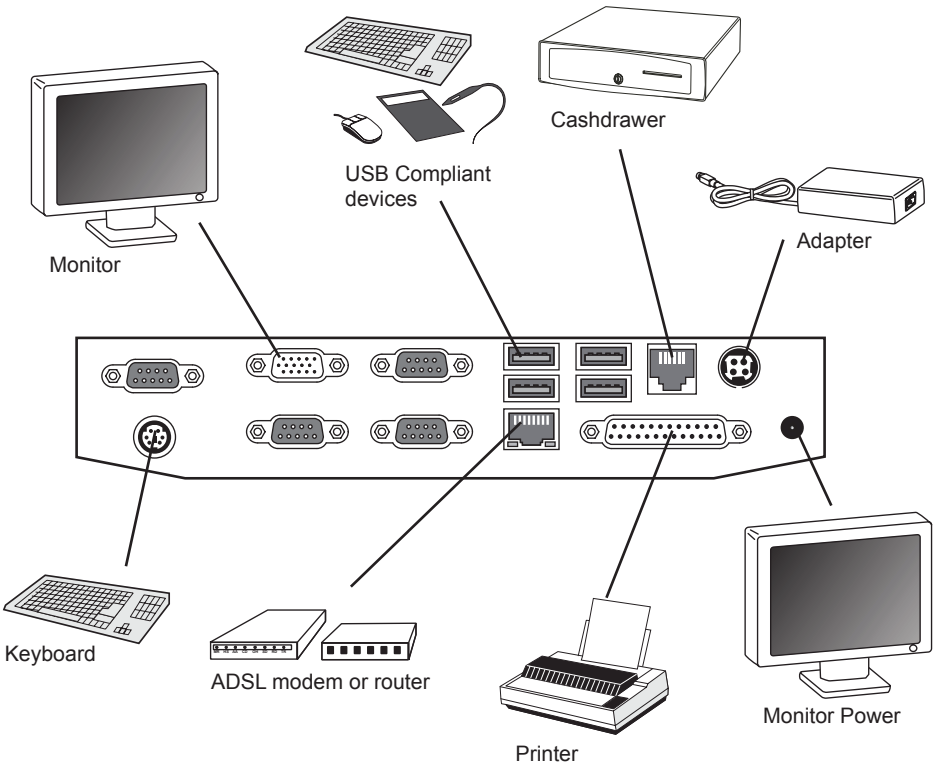


Figure 1.5 Connecting peripheral devices

CAUTION

Do not plug a phone line into the RJ-45 (ADSL or router) connector. Doing so can damage the connector.

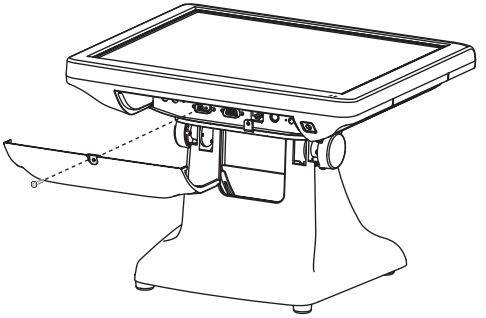
Connecting a cash drawer

Refer to the following to connect a cash drawer.

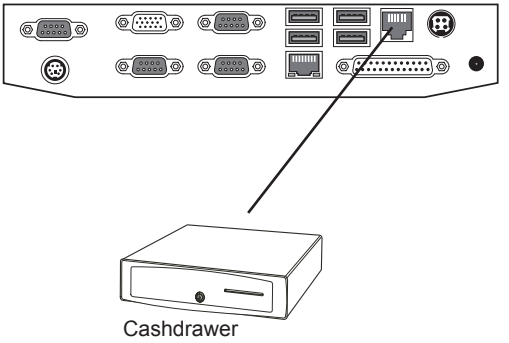
IMPORTANT

The cash drawer RJ-11 connector is DC+24V. Ensure the cash drawer to be connected matches this power specification.

1. Flip up the LCD panel
2. Remove the screw from the IO panel cover and remove the cover. You can find the I/O panel is at the bottom of the LCD panel.



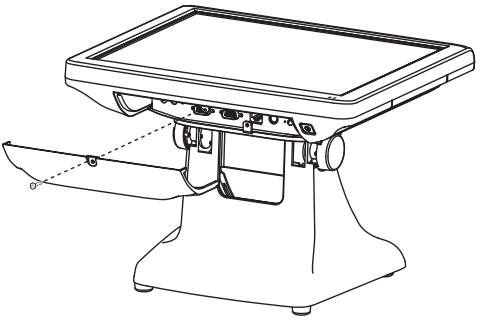
3. Connect the RJ-11 cable from the cash drawer to the RJ-11 connector on the I/O Panel.
4. Return the LCD panel back to the original position.



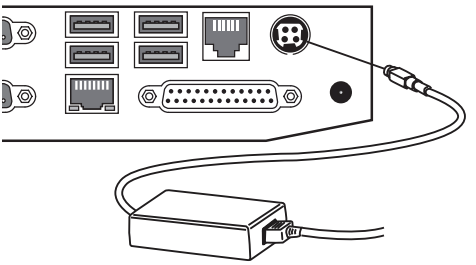
Powering the machine on and off

Refer to the following to power on and off the machine.

1. Flip up the LCD panel
2. Remove the screw from the IO panel cover and remove the cover. You can find the I/O panel is at the bottom of the LCD panel.

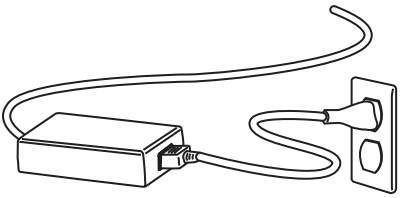


3. Connect the power cable to the DC-IN connector located on the right side of the SP-820 I/O panel.

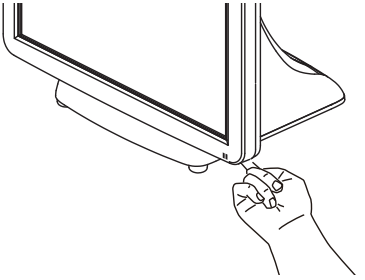


4. Plug the power cable into an electrical outlet.

CAUTION ***Using adaptor higher than 12V/12.5A may damage the system.***



5. Press the power button, it's at the bottom right of the machine. The power LED turns on.
6. To turn off the machine, shut down the operating system: the main power turns off automatically.



NOTE ***You may need to force power off the machine, for example if the operating system you are using does not support power down by the OS or if the system crashes or hangs. To force power off , long press the power button for five seconds.***

CHAPTER 2
BIOS SETUP

The primary function of the BIOS (Basic Input and Output System) is to identify and initiate component hardware. The BIOS parameters are stored in non-volatile BIOS memory (CMOS). CMOS contents don't get erased when the computer is turned off. The following topics are described in this chapter.

- About the Setup Utility on page 9
- Main Screen on page 12
- Advanced Settings on page 13
- Chipset Settings on page 23
- Boot Settings on page 29
- Security Settings on page 30
- Save & Exit on page 31

About the Setup Utility

The BIOS Setup Utility enables you to configure the following items:

- Hard drives, diskette drives, and peripherals
- Video display type and display options
- Password protection from unauthorized use
- Power management features

This Setup Utility should be used for the following:

- When changing the system configuration
- When a configuration error is detected and you are prompted to make changes to the Setup Utility
- When trying to resolve IRQ conflicts
- When making changes to the Power Management configuration
- When changing the User or Supervisor password

Entering the Setup Utility

When you power on the system, BIOS enters the Power-On Self Test (POST) routines. POST is a series of built-in diagnostics performed by the BIOS. After the POST routines are completed, the following message appears:

Press DEL to run Setup

Press the delete key <Delete> to access the BIOS Setup Utility:

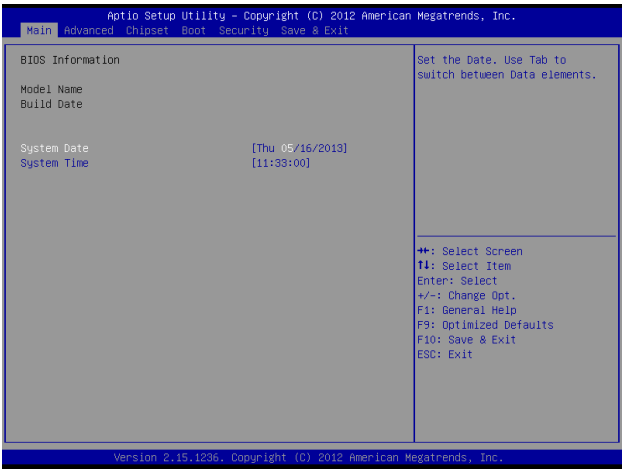

Aptio Setup Utility – Copyright (C) 2012 American Megatrends, Inc.
Main Advanced Chipset Boot Security Save & Exit
BIOS Information
Model Name
Build Date
System Date [Thu 05/16/2013]
System Time [11:33:00]
Set the Date. Use Tab to switch between Data elements.
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F9: Optimized Defaults
F10: Save & Exit
ESC: Exit
Version 2.15.1236. Copyright (C) 2012 American Megatrends, Inc.

Figure 2.1 Main BIOS screen

BIOS navigation keys

The BIOS navigation keys are listed below.

Key	Function
← →	Moves between the available menus
↑ ↓	Moves the cursor between the displayed parameters
+ –	Modifies the selected field's values
Enter	Go to sub screen
F1	Displays a general help screen
F9	Loads the default configurations
F10	Saves the current configuration and exits Setup
Esc	Exits the current screen

Using BIOS

When you start the Setup Utility, the main screen appears. The main screen of the Setup Utility displays a list of the options that are available. A highlight indicates which option is currently selected. Use the cursor arrow keys to move the highlight to other options. When an option is highlighted, execute the option by pressing <Enter>.

Some options lead to pop-up dialog boxes that prompt you to verify that you wish to execute that option. Other options lead to dialog boxes that prompt you for information.

Some options (marked with a triangle ►) lead to sub screens that enable you to change the values for the option. Use the cursor arrow keys to scroll through the items in the sub screen.

Main Screen

This screen includes System BIOS Information, Processor, System memory and displays the System Time and System Date.

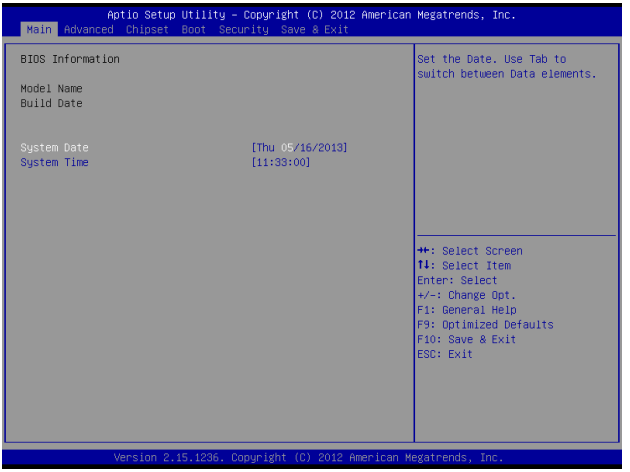

Aptio Setup Utility – Copyright (C) 2012 American Megatrends, Inc.
Main Advanced Chipset Boot Security Save & Exit
BIOS Information
Model Name
Build Date
System Date [Thu 05/16/2013]
System Time [11:33:00]
Set the Date. Use Tab to switch between Data elements.
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F9: Optimized Defaults
F10: Save & Exit
ESC: Exit
Version 2.15.1236. Copyright (C) 2012 American Megatrends, Inc.

Figure 2.2 Main Screen

System Overview

This screen displays System BIOS Information, Processor, System memory, System Time and System Date.

System Time/ System Date

The System Time and System Date items show the current date and time held by the machine.

To set the time and date use the Tab key to move from field to field. Simply type the new number required.

If you are running a Windows OS, these items are automatically updated whenever you make changes to the Windows Time and Date Properties utility.

Advanced Settings

This setup screen includes sub-menus for APCI Configuration, CPU Configuration, SATA Configuration, USB Configurations, Super IO Configurations and Hardware Health Configuration.

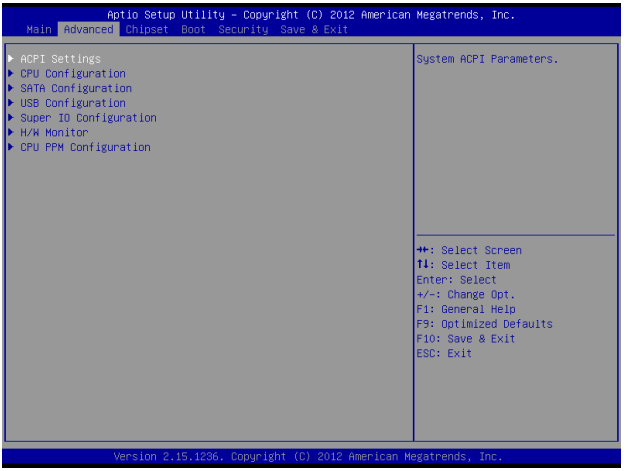


Figure 2.3 Advanced Settings Screen

ACPI Settings

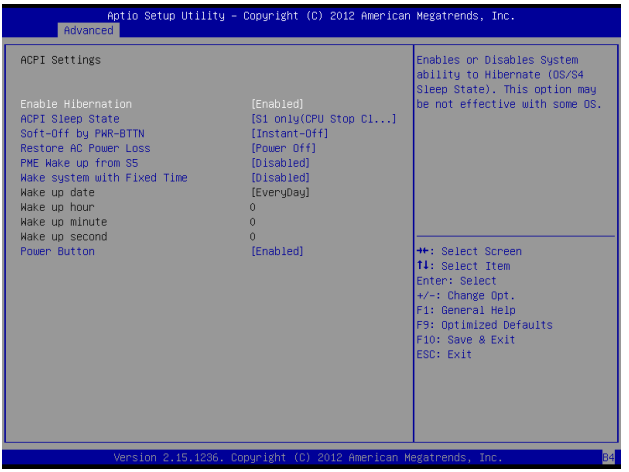

Aptio Setup Utility – Copyright (C) 2012 American Megatrends, Inc.
Advanced
ACPI Settings
Enable Hibernation [Enabled]
ACPI Sleep State [S1 only(CPU Stop Cl...]
Soft-Off by PWR-BTTN [Instant-Off]
Restore AC Power Loss [Power Off]
PME Wake up from S5 [Disabled]
Wake system with Fixed Time [Disabled]
Wake up date [EveryDay]
Wake up hour 0
Wake up minute 0
Wake up second 0
Power Button [Enabled]
Enables or Disables System ability to Hibernate (OS/S4 Sleep State). This option may be not effective with some OS.
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F9: Optimized Defaults
F10: Save & Exit
ESC: Exit
Version 2.15.1236. Copyright (C) 2012 American Megatrends, Inc.

Figure 2.4 ACPI Settings sub-menu

Enable Hibernation
This item allows user to enable or disable the hibernation feature for OS. This option may be not effective with some OS.

ACPI Sleep State
Use this item to define how the system suspends. In the default, S1 only (CPU Stop Clock), the suspend mode is equivalent to a software power down. If you select S3 only (Suspend To RAM), the suspend mode is a suspend to RAM - the system shuts down with the exception of a refresh current to the system memory.

Soft-Off by PWR-BTTN
Under ACPI (Advanced Configuration and Power management Interface) you can create a software power down. In a software power down, the system can be resumed by Wake Up Alarms. This item lets you install a software power down that is controlled by the normal power button on your system. If the item is set to Instant-Off, then the power button causes a software power down. If the item is set to Delay 4 Sec. then you have to hold the power button down for four seconds to cause a software power down.

Restore AC Power Loss
This item sets the system status after restore on AC power loss.

PME Wake up from S5
This feature allows the system wakeup on PME (Power Management Event).

Wake system with Fixed Time
This function is for setting the Date and Time for your computer to boot up. When enabled, more options will appear for you to specific the Date and Time.

Power Button
When disabled, the power button can’t turn the system power off. When enabled, the power button can be used to turn off the system.

CPU Configuration

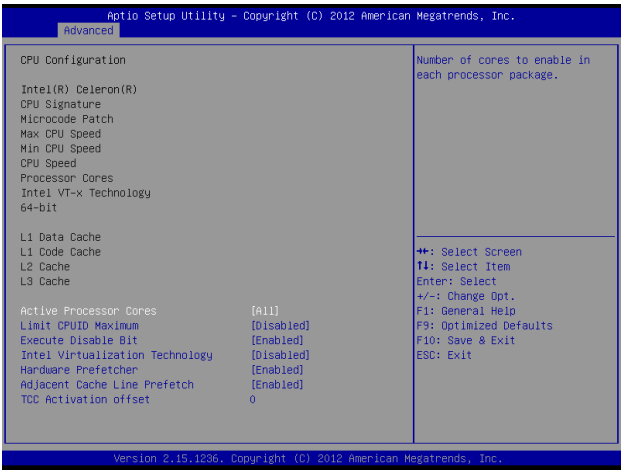


Figure 2.5 CPU Configuration sub-menu

Active Processor Cores
This feature allows you to increase or decrease the number of active processor cores.

Limit CPUID Maximum
When enabled, the processor will limit the maximum CPUID input value to 03h when queried, even if the processor supports a higher CPUID input value. When disabled, the processor will return the actual maximum CPUID input value of the processor when queried.

Execute-Disable Bit
This feature is used to protect certain system memory data regions from insertion and execution of potentially harmful code.

Intel Virtualization Technology
This feature allows you to enable or disable Intel Virtualization Technology support that allow multiple OS to run simultaneously on the same system.

Hardware Prefetcher
When enabled, the processor will automatically analyzes and prefetch data and code.

Adjacent Cache Line Prefetch
When enabled, the processor will retrieve the current requested cache line, as well as the subsequent cache line. When disabled, the processor will only retrieve the currently requested cache line.

TCC Activation offset
This item is used to set the TCC activation temperature.

SATA Configuration

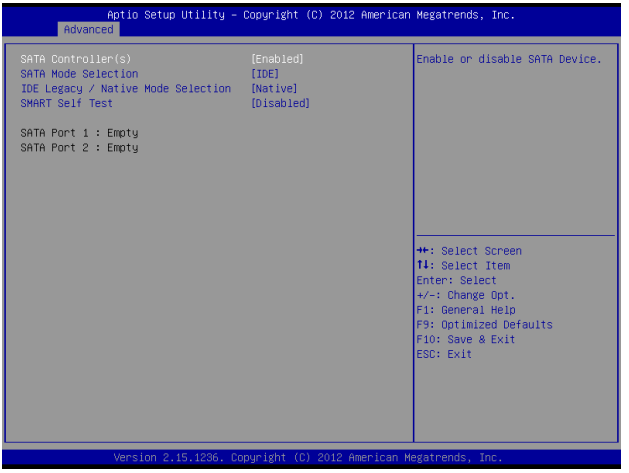

Aptio Setup Utility – Copyright (C) 2012 American Megatrends, Inc.
Advanced
SATA Controller(s) [Enabled]
SATA Mode Selection [IDE]
IDE Legacy / Native Mode Selection [Native]
SMART Self Test [Disabled]
SATA Port 1 : Empty
SATA Port 2 : Empty
Enable or disable SATA Device.
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F9: Optimized Defaults
F10: Save & Exit
ESC: Exit
Version 2.15.1236. Copyright (C) 2012 American Megatrends, Inc.

Figure 2.6 SATA Configuration sub-menu

SATA Controller(s)

Use this item to enable or disable the on-chip SATA controller. The default setting is Enabled.

SATA Mode Selection

This item is used to configure SATA mode. The default setting is IDE.

IDE Legacy / Native Mode Selection

This item allows you to select IDE mode. Select Legacy mode for old OS such as Windows 98/2000. Select Native mode for Windows XP and later version.

SMART Self Test

This item is used to enable monitoring of hard disks that support the S.M.A.R.T. (Self-Monitoring And Reporting Technology) feature, which can allow the hard disk to report, under some circumstances, impending failures of the hard disk.

USB Configuration

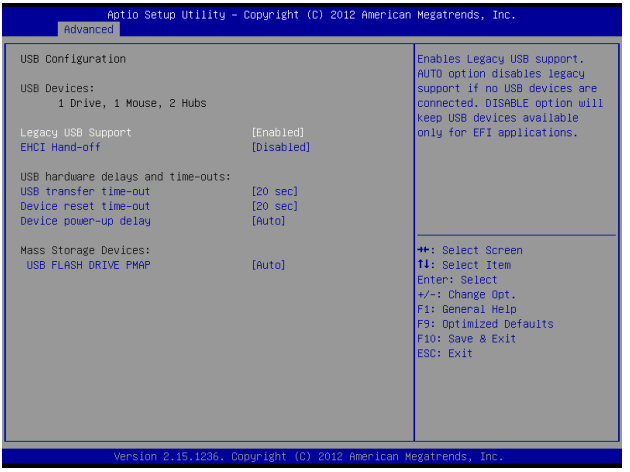

Aptio Setup Utility – Copyright (C) 2012 American Megatrends, Inc.
Advanced
USB Configuration
USB Devices:
1 Drive, 1 Mouse, 2 Hubs
Legacy USB Support [Enabled]
EHCI Hand-off [Disabled]
USB hardware delays and time-outs:
USB transfer time-out [20 sec]
Device reset time-out [20 sec]
Device power-up delay [Auto]
Mass Storage Devices:
USB FLASH DRIVE PMAP [Auto]
Enables Legacy USB support. AUTO option disables legacy support if no USB devices are connected. DISABLE option will keep USB devices available only for EFI applications.
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F9: Optimized Defaults
F10: Save & Exit
ESC: Exit
Version 2.15.1236. Copyright (C) 2012 American Megatrends, Inc.

Figure 2.7 USB Configuration sub-menu

Legacy USB Support
When enabled, the BIOS will enable legacy support for USB keyboards, mice and floppy drives. You will be able to use these USB devices even with operating systems that do not support USB.

EHCI Hand-Off
This item allows you to enable support for operating systems without an EHCI hand-off feature.

USB transfer time-out
This item allows you to specific the USB transfer timeout value for control, bulk, and interrupt transfers.

Device reset time-out
This item allows you to specific the timeout periods for USB device initialization and the Start Unit command to enable mass storage access operations.

Device power-up delay
This item allows you to select the time for devices report themselves to the Host Controller, including through USB hubs. When set to Auto, root port devices will be given 100 ms, while devices connected to hubs will be given time as specified in the Hub descriptor When this parameter is set to Manual, a delay from 1 to 40 seconds can be selected.

Super IO Configuration

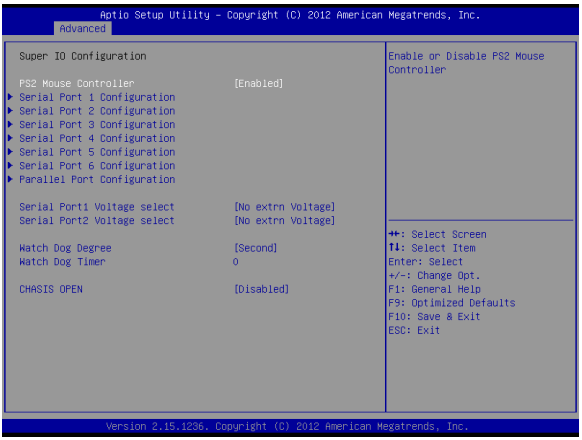

Aptio Setup Utility – Copyright (C) 2012 American Megatrends, Inc.
Advanced
Super IO Configuration
PS2 Mouse Controller [Enabled]
Serial Port 1 Configuration
Serial Port 2 Configuration
Serial Port 3 Configuration
Serial Port 4 Configuration
Serial Port 5 Configuration
Serial Port 6 Configuration
Parallel Port Configuration
Serial Port1 Voltage select [No extrn Voltage]
Serial Port2 Voltage select [No extrn Voltage]
Watch Dog Degree [Second]
Watch Dog Timer 0
CHASIS OPEN [Disabled]
Enable or Disable PS2 Mouse Controller
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F9: Optimized Defaults
F10: Save & Exit
ESC: Exit
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Figure 2.8 Super IO Configuration sub-menu

Serial Port x Voltage select
This item allows you to set voltage for a serial port.

Watch Dog Degree
This item allows you to determine the functional degree of Watch Dog.

Watch Dog Timer
When select any time period, the Watchdog Timer will be enabled after that time period passes, every time the system boots up. It will monitor the time taken for each task performed by the operating system. Any timeout will cause it to reboot the computer.

CHASIS OPEN
This function allows you to enable/ disable case open detection.

Serial Port x Configuration

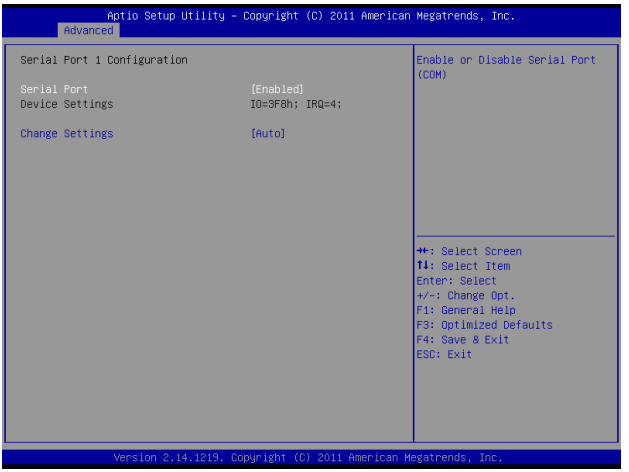


Figure 2.9 Serial Port x Configuration sub-menu

Serial Port x

This item allows you to enables or disables a serial port.

Change Settings

This item allows you to specific IO address and IRQ for the serial port.

Parallel Port Configuration

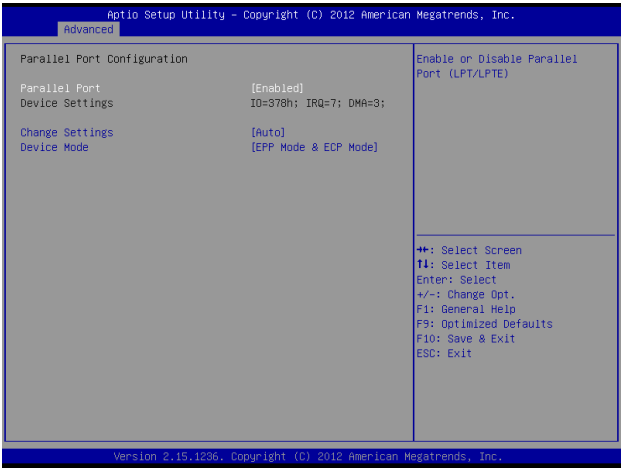

Aptio Setup Utility – Copyright (C) 2012 American Megatrends, Inc.
Advanced
Parallel Port Configuration
Parallel Port [Enabled]
Device Settings IO=378h; IRQ=7; DMA=3;
Change Settings [Auto]
Device Mode [EPP Mode & ECP Mode]
Enable or Disable Parallel Port (LPT/LPTE)
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F9: Optimized Defaults
F10: Save & Exit
ESC: Exit
Version 2.15.1236. Copyright (C) 2012 American Megatrends, Inc.

Figure 2.10 Parallel Port Configuration sub-menu

Parallel Port
This item allows you to enables or disables the parallel port.

Change Settings
This item allows you to specific IO address and IRQ for the parallel port.

Device Mode
This item allows you to set the data transfer protocol for the parallel port. There are four options: Standard Parallel Port Mode, EPP Mode (Enhanced Parallel Port), ECP Mode(Extended Capabilities Port), and ECP & EPP Mode. The default setting is Standard Parallel Port Mode. Extended Capabilities Port (ECP) and Enhanced Parallel Port (EPP) are bidirectional modes, allowing both data input and output. ECP and EPP modes are only supported with EPP- and ECP-aware peripherals.

H/W Monitor

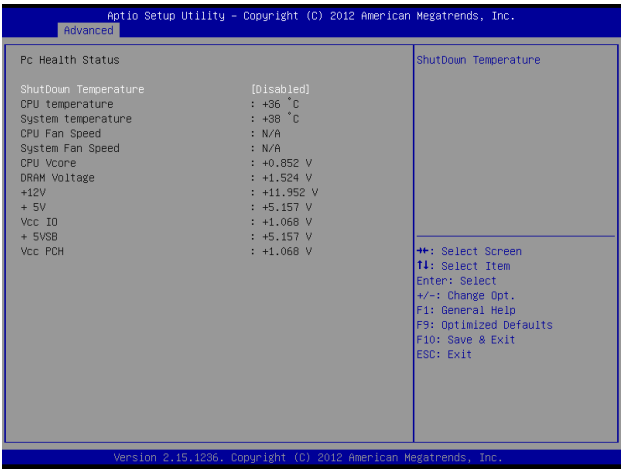

Aptio Setup Utility – Copyright (C) 2012 American Megatrends, Inc.
Advanced
Pc Health Status
ShutDown Temperature [Disabled]
CPU temperature : +36 °C
System temperature : +38 °C
CPU Fan Speed : N/A
System Fan Speed : N/A
CPU Vcore : +0.852 V
DRAM Voltage : +1.524 V
+12V : +11.952 V
+ 5V : +5.157 V
Vcc IO : +1.068 V
+ 5VSB : +5.157 V
Vcc PCH : +1.068 V
ShutDown Temperature
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F9: Optimized Defaults
F10: Save & Exit
ESC: Exit
Version 2.15.1236. Copyright (C) 2012 American Megatrends, Inc.

Figure 2.11 Hardware Monitor sub-menu

Shutdown Temperature

This item allows setting the shutdown temperature. Once enabled, the machine will automatically shutdown when the temperature reaches the limit specified.

CPU PPM Configuration

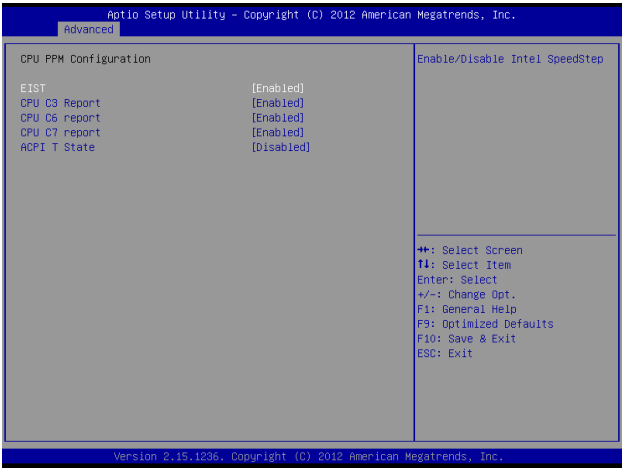


Figure 2.12 CPU PPM Configuration sub-menu

EIST
This item allow you to enable or disable EIST (Enhanced Intel Speedstep Technology). When enabled, CPU will reduce power consumption.

CPU C3 Report
This item is used to enable or disable CPU C3 report to OS.

CPU C6 Report
This item is used to enable or disable CPU C6 report to OS.

CPU C7 Report
This item is used to enable or disable CPU C7 report to OS.

ACPI T State
This item is used to enable or disable Processor Throttling States.

Chipset Settings

This screen allow you to configure the chipset options.

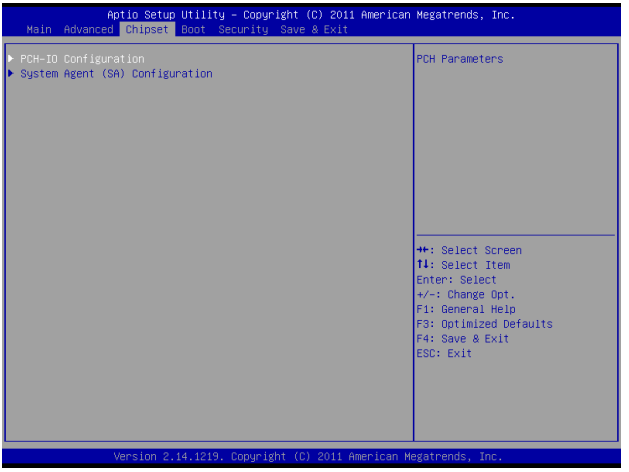

Aptio Setup Utility – Copyright (C) 2011 American Megatrends, Inc.
Main Advanced Chipset Boot Security Save & Exit
PCH-IO Configuration
System Agent (SA) Configuration
PCH Parameters
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
Version 2.14.1219. Copyright (C) 2011 American Megatrends, Inc.

Figure 2.13 Chipset Settings Screen

System Agent (SA) Configuration

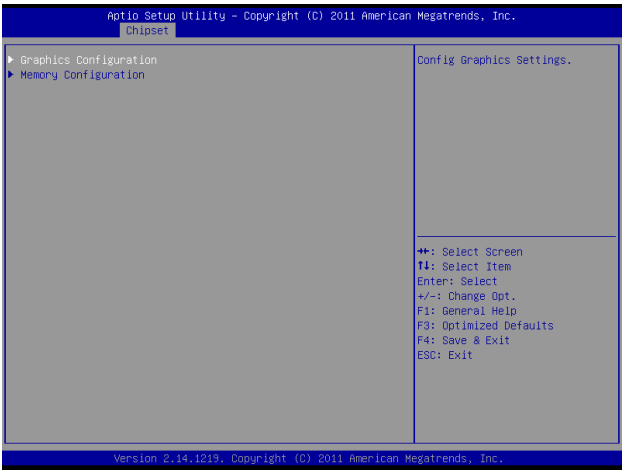


Figure 2.14 System Agent (SA) Configuration sub-menu

PCH IO Configuration

Figure 2.15 PCH IO Configuration sub-menu

Onboard LAN
Use this item to enable or disable the onboard LAN controller. The default setting is Enabled.

Onboard LAN OPROM
This feature allows you to enable or disable the onboard LAN boot ROM to boot system.

Mini PCI Express Port
This item allows you to enable or disable the Mini PCI Express device.

ASPM
This item is used to select the level of PCI Express Active State Power Management.

PCIe Speed
This item is used to select Gen1 or Gen2 speed for PCIe.

Detect Non-Compliance Device
When enabled, system will detect non-compliance PCIe device, and take longer at POST time.

EuP Control
When enabled, the system will meet EuP requirement.

High Precision Timer
This item allows you to enable or disable the High Precision Timer feature.

USB Configuration

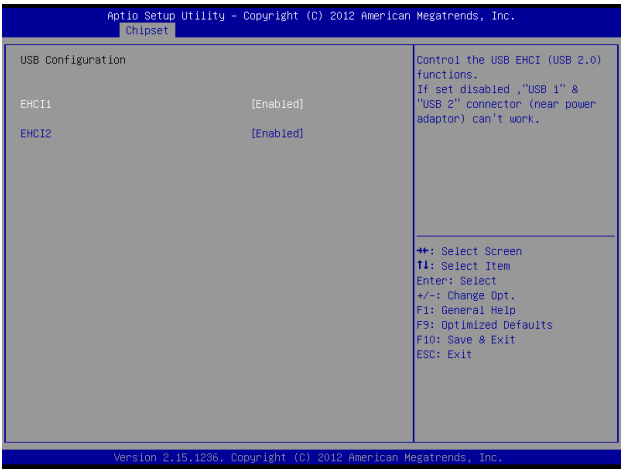

Aptio Setup Utility – Copyright (C) 2012 American Megatrends, Inc.
Chipset
USB Configuration
EHCI1 [Enabled]
EHCI2 [Enabled]
Control the USB EHCI (USB 2.0) functions.
If set disabled ,"USB 1" & "USB 2" connector (near power adaptor) can't work.
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F9: Optimized Defaults
F10: Save & Exit
ESC: Exit
Version 2.15.1236. Copyright (C) 2012 American Megatrends, Inc.

Figure 2.16 USB Configuration sub-menu

EHCI1, EHCI2

These item allow you to enable or disable USB 2.0 support.

Graphics Configuration

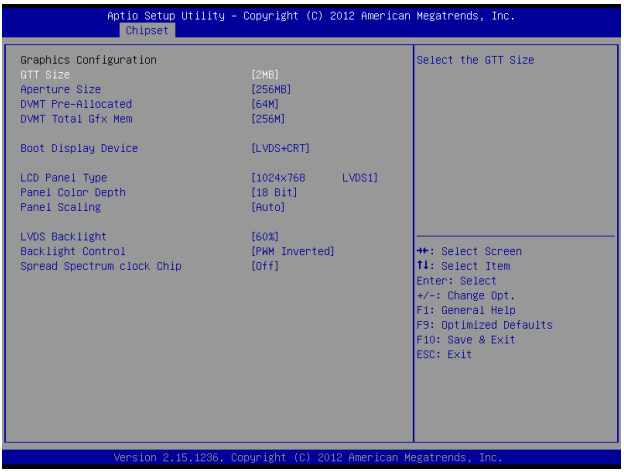


Figure 2.17 Graphics Configuration sub-menu

GTT Size
This field allows you to select how much system memory can be allocated to GTT.

Aperture Size
This field allows you to select how much system memory can be allocated to graphics chip for video purposes. The aperture is a portion of the memory address range dedicated to graphics memory address space. Host cycles that hit the aperture range are forwarded to the graphics chip without any translation.

DVMT Pre-Allocated
This item allows you to adjust system memory that can be pre-allocated as graphics memory.

DVMT Total Gfx Mem
This item allows you to set the maximum amount of system memory that can be allocated as graphics memory.

Boot Display Device
This option allows you to set the video device will enable during the POST.

LCD Panel Type
This item allows you to select the LCD panel type.

Panel Color Depth
This item allows you to select the color depth of the LCD panel.

Panel Scaling

This item allows you to determine how various resolutions appear on your screen.

Option	Description
Auto	The scaling unit on your graphics card will rescale the image before it reaches your LCD display. This option results in the best image quality.
Off	The image isn't scaled at all, but instead your LCD display will run at its maximum resolution and the image will display in the centre of your LCD display. This may result in a black border around the sides of the image.
Office Scaling	This option will maintain the original aspect ratio of the chosen resolution and display it with black bars to the sides/above/below the on-screen image as required.

LVDS Backlight

This feature allows you to adjust the backlight of the LCD monitor.

Backlight Control

This feature allows you to select the backlight control interface.

Spread Spectrum clock Chip

When the motherboard clock generator pulses, the extreme values (spikes) of the pulses creates EMI (Electromagnetic Interference). The Spread Spectrum function reduces the EMI generated by modulating the pulses so that the spikes of the pulses are reduced to flatter curves. If you do not have any EMI problem, leave the setting at Off for optimal system stability and performance.

Memory Configuration

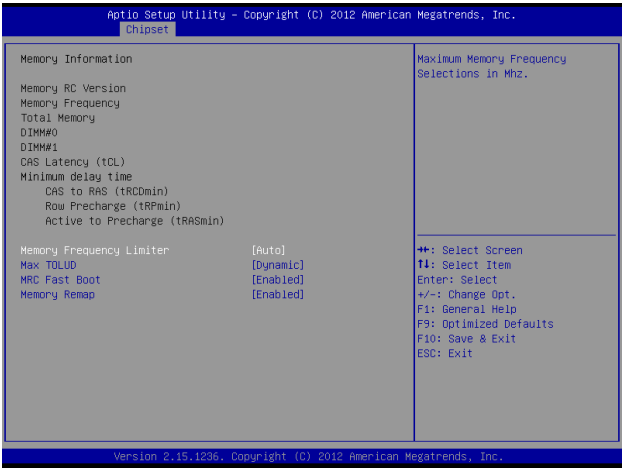


Figure 2.18 Memory Configuration sub-menu

Memory Frequency Limiter
This item allows you to set the maximum frequency of system memory.

Max TOLUD
This field allows you to select the maximum value of TOLUD. Dynamic assignment would adjust TOLUD automatically based on largest MMIO length of installed graphic controller.

MRC Fast Boot
MRC Fast Boot can speed up system cold booting. This item allows you to enable or disable it.

Memory Remap
This item allows you to enable or disable Memory Remap feature.

Boot Settings

This screen allow you to configure the boot options.

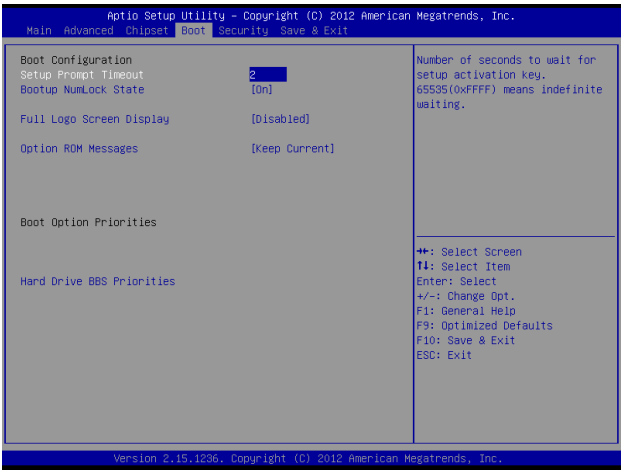


Figure 2.19 Boot Settings Screen

Setup Prompt Timeout

This item allows you to select the number of seconds to wait for setup activation key.

Bootup Numlock State

This item is used to select the Power-on state for Numlock.

Full Logo Screen display

This item enables you to show the full screen logo on the bootup screen.

Option ROM Messages

This item allows you to set the display mode for option ROM.

Security Settings

This screen allows you to configure the system security settings.

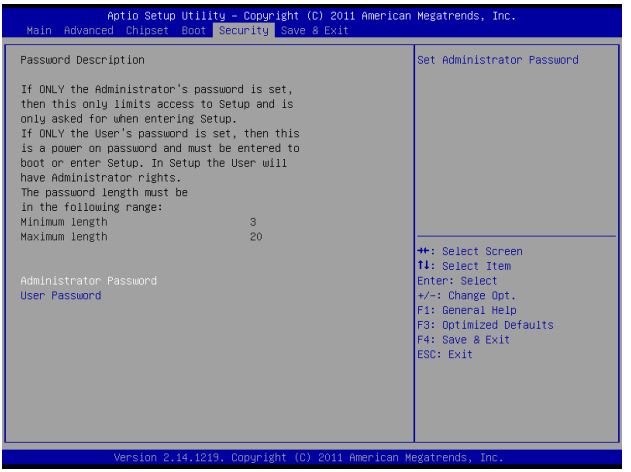
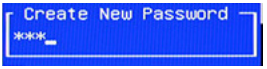

Aptio Setup Utility – Copyright (C) 2011 American Megatrends, Inc.
Main Advanced Chipset Boot Security Save & Exit
Password Description
If ONLY the Administrator's password is set, then this only limits access to Setup and is only asked for when entering Setup.
If ONLY the User's password is set, then this is a power on password and must be entered to boot or enter Setup. In Setup the User will have Administrator rights.
The password length must be in the following range:
Minimum length 3
Maximum length 20
Administrator Password
User Password
Set Administrator Password
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
Version 2.14.1219. Copyright (C) 2011 American Megatrends, Inc.

Figure 2.20 Security Settings Screen

Create or Change Adminitrator/ User Password

An administrator password takes precedence over a user password, and the administrator can limit the activities of a user. To create or change a password, follow these steps:

1. Highlight the item Administrator/ User Password on the Security menu and press <Enter>.
2. The password dialog box appears.



3. If you are creating a new password, type in the password. You can type alphanumeric characters. Symbols are ignored. The Administrator/ User Password item differentiates between upper and lower case characters. Press <Enter> after you have typed in the password. To confirm the password, type the password again and press <Enter>.
4. Write the passwords down and keep them in a safe place.

Clear Adminitrator/ User Password

To clear the password, leave the dialog box blank, press <Enter>, when the confirm box appears, press <Enter> again.

Save & Exit

This screen allows you to load default setting values, save changes and discard changes.

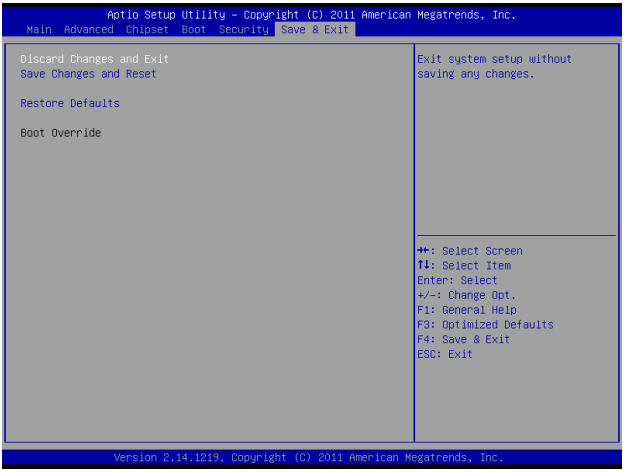

Aptio Setup Utility – Copyright (C) 2011 American Megatrends, Inc.
Main Advanced Chipset Boot Security Save & Exit
Discard Changes and Exit
Save Changes and Reset
Restore Defaults
Boot Override
Exit system setup without saving any changes.
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
Version 2.14.1219. Copyright (C) 2011 American Megatrends, Inc.

Figure 2.21 Save & Exit Screen

Discard Changes and Exit

Highlight this item and press <Enter> to discard any changes that you have made in the Setup Utility and exit. When the dialog box appears, press <Yes> to discard changes and reset, or press <No> to return to the menu.

NOTE

If you have made settings that you do not want to save, use the "Discard and Reset" item and press Yes to discard any changes you have made.

Save Changes and Reset

Highlight this item and press <Enter> to save the changes that you have made in the Setup Utility and restart the system. When the dialog box appears, press <Yes> to save and exit, or press <No> to return to the menu.

Restore Defaults

This option opens a dialog box that lets you load optimized defaults for all appropriate items in the Setup Utility. The optimized defaults place demands on the system that may be greater than the performance level of the components, such as the CPU and the memory. If you only want to load setup defaults for a specific option, select and display that option, and then press <F9>.

Follow these instructions to load the optimized defaults:

1. From the Save & Exit screen, scroll to Restore Defaults.
2. Press <Enter> to open the Load Optimized Defaults screen.
3. Select <Yes>.
4. Press <Enter> to load the defaults.

CHAPTER 3
UPGRADING COMPONENTS

This chapter describes how to upgrade components for the SP-820. The following topics are described.

- Safety and precautions on page 33
- Before you begin on page 34
- Upgrading the hard drive on page 35

Safety and precautions

Computer components and electronic circuit boards can be damaged by discharges of static electricity. Working on computers that are still connected to a power supply can be extremely dangerous. Follow these guidelines to avoid damage to the computer or injury to yourself.

- Always disconnect the unit from the power outlet.
- Leave all components inside the static-proof packaging that they ship with until they are ready for installation.
- After replacing optional devices, make sure all screws, springs, or other small parts are in place and are not left loose inside the case. Metallic parts or metal flakes can cause electrical shorts.

Only qualified personnel should perform repairs on the SP-820. Damage due to unauthorized servicing is not covered by the warranty. If you are not confident of installing a hard drive or CompactFlash card, we recommend that you refer the job to qualified personnel.

If the LCD breaks and fluid gets onto your hands or into your eyes, immediately wash with water and seek medical attention.

The inverter card has high voltage. Do not touch the inverter card while power is connected to the machine. Unplug the power cord before attempting to replace any part.

To prevent static damage to components, wear a grounded wrist strap. Alternatively, discharge any static electricity by touching the bare metal chassis of the unit case, or the bare metal body of any other grounded appliance.

Hold electronic circuit boards by the edges only. Do not touch the components on the board unless it is necessary to do so. Do not flex or stress the circuit board. Do not hold components such as a processor by its pins; hold it by the edges.

Before you begin

Make sure you have a stable, clean working environment. Dust and dirt can get into components and may cause malfunction. Adequate lighting and proper tools can prevent you from accidentally damaging the internal components.

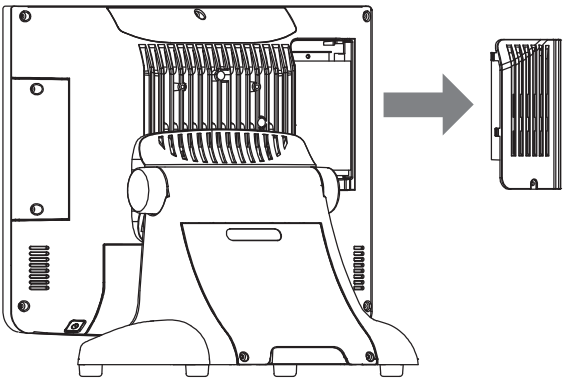
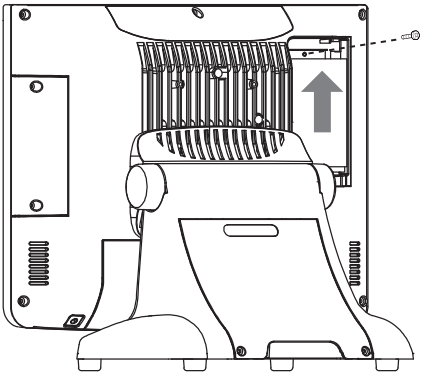
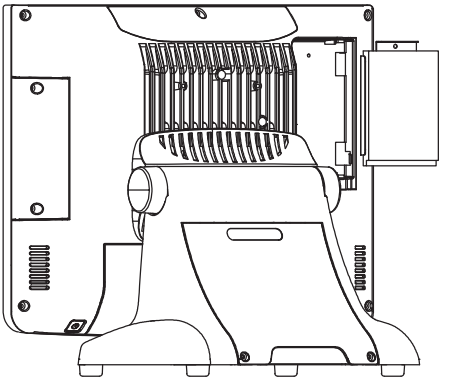
Most of the electrical and mechanical connections can be disconnected by using your fingers. It is recommended that you do not use needle-nosed pliers to disconnect connectors as these can damage the soft metal or plastic parts of the connectors.

CAUTION

To prevent scratching the case of the machine, make sure the worktop surface is clean and flat.

Upgrading the hard drive

Refer to the following to remove and replace the hard drive.

1. Turn off the device properly through the operating system. 2. Disconnect the power cord from the power outlet. 3. Remove the screw form the hard drive compartment cover and slide the cover to the right as it shown on the picture.	
4. Remove the screw from the hard drive tray. 5. Slide the hard drive disk up as it shown on the picture.	
6. Remove the hard drive tray. 7. Disconnect the power cable and SATA cable from the hard drive. 8. Remove the four screws, then remove the hard drive out from the tray.	

To replace the hard drive, reverse the above procedure.

This appendix describes locating and solving problems that you may encounter while using the SP-820 POS.

Troubleshooting

Often after time spent troubleshooting, the problem is traced to something as simple as a loose connection. Check the following before proceeding to the problem-specific solutions.

Tips for Troubleshooting

In each problem-specific section, try the steps in the order suggested. This may help you to solve the problem more quickly. Try to pin point the problem and thus avoid replacing non-defective parts. For example, if you replace batteries and the problem remains, put the original batteries back and go to the next step.

Keep a record of the steps you take when troubleshooting: The information may be useful when calling for technical support or for passing on to service personnel.

- Use some other electrical device to confirm that the electrical outlet is working.
- Ensure all connections are securely attached.

The Power-On Self Test

The Power-On Self Test (POST) runs every time you turn on or reset the computer. The POST checks memory, the mainboard, the display, the keyboard, the disk drives, and other installed options.

If failure is detected in an area other than the mainboard (such as the keyboard or an adapter card), an error message is displayed on the screen and testing is stopped.

If your system does not successfully complete the POST, but displays a blank screen, have the SP-820 serviced.

Beep Errors at POST

There are two kinds of beep codes in the BIOS.

- Video error - an eight-beeps indicates a video error, the screen can not be initialized and no information can be displayed.
- DRAM error - a continuous beep indicates that a DRAM error has occurred.

Message Errors at POST

If the BIOS detects an error during the POST, a message is displayed. Refer to the following table for a list of the errors that display.

The system uses a 3V CR2032 battery (CMOS battery) mounted on the mainboard to keep time. There is a risk of explosion if the wrong battery type is used when replacing. Dispose of used batteries according to local ordinance regulations.

ERROR MESSAGE	CAUSE	SOLUTION
CMOS BATTERY HAS FAILED	The CMOS battery is depleted.	Replace the battery.
CMOS CHECKSUM ERROR	The battery may be weak.	Replace the battery.
	The CMOS may be corrupt.	Have the SP-820 serviced.
HARD DISK(S) FAIL (80)	HDD reset failed.	Have the SP-820 serviced.
HARD DISK(S) FAIL (40)	HDD controller diagnostics failed.	Have the SP-820 serviced.
HARD DISK(S) FAIL (20)	HDD initialization error.	Have the SP-820 serviced.
HARD DISK(S) FAIL (10)	Unable to recalibrate fixed disk.	Have the SP-820 serviced.
KEYBOARD IS LOCKED OUT - UNLOCK THE KEY	The keyboard is locked and the key-board controller is pulled low.	Have the SP-820 serviced.
KEYBOARD ERROR OR NO KEYBOARD PRESENT	A keyboard is not detected.	Make sure the keyboard is attached correctly and no key is pressed during boot.
MANUFACTURING POST LOOP	System keeps rebooting because the keyboard controller is pulled low for testing purposes.	Have the SP-820 serviced.
BIOS ROM CHECKSUM ERROR - SYSTEM HALTED	The ROM address is incorrect.	Have the SP-820 serviced.
MEMORY TEST FAIL	The memory card is not correctly installed or is damaged.	Have the SP-820 serviced.

General Problems

Refer to the following general problems you may encounter.

PROBLEM	SOLUTION
The display screen is dark.	Make sure that the SP-820 is not in suspend mode.
An incorrect date and time are displayed.	Correct the date and time using the DOS DATE and TIME commands or the options in the Setup Utility. (You can also set the date and time in Windows by double clicking the clock on the task bar or in the control panel.) If the date and time become incorrect after a short time, the CMOS battery may be depleted. Replace the battery.
The following message appears at boot up: "Invalid system disk, Replace the disk, and then press any key"	Ensure that an operating system is installed. Check the boot sequence in the BIOS setup utility.
You hear irregular beeps during operation of the computer and the system halts.	Have the SP-820 serviced.
An unidentified message is displayed.	Reboot the computer and run the BIOS Setup Utility. Confirm the Setup Utility parameters. If the same message is displayed after booting up again, have the SP-820 serviced.
You cannot operate the printer.	Check the printer cable connection. Ensure that the printer power switch is turned on. Confirm that the printer is on-line.
You cannot use a mouse or keyboard.	Check the cable connection. Check the mouse or keyboard with another computer to see if it works. If the same problem occurs, replace the mouse or keyboard.
The screen is blank and you don't hear any beeps.	Check that the AC adapter is connected to the SP-820 and the power cord is plugged into a working electrical outlet. Check that the power is on. (Press the power switch again for confirmation.)
The screen is blank and you hear a continuous beep, or two or more beeps.	Have the SP-820 serviced.
Only the cursor appears.	Reinstall the operating system, and power on the SP-820.
Audio problems	Ensure the audio cable is not defective. The mute is off.

Having the SP-820 Serviced

If you are unable to solve the problem, you should have the terminal serviced. Pack the terminal in the original carton. (See “Unpacking the SP-820” on page 1.) Include a description of the problem and a checklist of the steps you took when trying to fix the problem. The information may be useful to the service personnel. Return the terminal to the place you purchased it.

Specifications

Item	SP-820
CPU Type	Intel®1037U (2M Cache, 1.80 GHz)
LCD	15” Active TFT color LCD, resolution 1024 x 768
Touch	5-wire Resistive touch (PS2 interface), Capacitive touch(option)
Memory	204pin DDR3 SO-DIMM 1GB (2 DIMM Sockets up to 16 GB)
Ethernet	10/100/1000 Mbps Gigabit Ethernet
Storage	Internal 2.5” type SATA HDD 160GB x 1
I/O Interface	4 * COM ports COM1~4 on rear I/O, powered with DC +0/5/12V COM1~2 by BIOS selection COM3~4 by jumper setting
	1 * DB-15 VGA port
	1 * DB-25 for LPT port
	1 * RJ11 port supports 2 cash drawer(DC+24v)
	1 * RJ-45 LAN port with activity and link LEDs
	1 * PS/2 KB
	1 * DC+12v out
	4 * USB 2.0
	1 * DC +12V input power-jack

Expansion Options	1 * Mini PCI-e, Support Wireless LAN module
Optional Peripherals	3 tracks magnetic reader
	Customer display module (2 x 20 VFD)
	Biometric Reader, Smart Card Reader, I-Button, RFID reader
Operation System	Window XP, POS Ready2009 ,Window 7, POS Ready7, Window 8, Linux (Ubuntu)
Power Supply	AC100~240V/DC+12V, 90 watt power adaptor
Dimensions	Physical:360mm (W) x233mm (D) x 323mm (H)
Operating Temp	0°C ~ +40°C
Storage Temperature	-20°C ~ +60°C
Humidity	15%~80%
Certification	CE, FCC, LVD, VCCI, BSMI, Class A

* specification subject to change without prior notice